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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/724,146      | 11/28/2000  | Mike Binnard         | PA0324-US\\11269.21 | 6125             |

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| EXAMINER |
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STOCK JR, GORDON J

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2877

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                            |                  |  |
|------------------------------|----------------------------|------------------|--|
| <b>Office Action Summary</b> | Application No.            | Applicant(s)     |  |
|                              | 09/724,146                 | BENNARD ET AL.   |  |
|                              | Examiner<br>Gordon J Stock | Art Unit<br>2877 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-32 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 16-23 is/are allowed.
- 6) Claim(s) 1-5, 9, 13-15 and 30-32 is/are rejected.
- 7) Claim(s) 6-8, 10-12 and 24-29 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 28 November 2000 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.
 

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

|   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                           | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 . | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Objections*

1. **Claim 24** is objected to for the following: the method steps of claim 24 do not appear to describe a method of making a stage assembly (specifically, the steps of monitoring the position of the device table and determining the position of the first X mirror relative to the second X mirror). Therefore, a new preamble to the method is required that is clearly indicative of the method to which the steps are directed.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claim 30** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to **claim 30**, the limitation, “providing the stage assembly made by the method of **claim 24**,” is indefinite, for the method of **claim 24** does not refer to a method of making a stage assembly (see objection above); thereby, rendering the term, “the stage assembly made by the method of **claim 24**,” unclear.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 14, 15, and 30-32** are rejected under 35 U.S.C. 102(e) as being anticipated by **Osanai et al. (6,285,444)**.

As for **claims 14-15**, Osanai in a positioning system and position measuring method for use in an exposure apparatus discloses the following: a device, a wafer (col. 9, lines 33-60). As for the statements “manufactured with the exposure apparatus according to claim 1” and “on which an image has been formed by the exposure apparatus of claim 13” “even though product-by-process claims are limited by and defined by a process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F. 2d 695,698, 227 USPQ 964,966 (Fed. Cir. 1985).

As to claims **30-32**, Osanai in a positioning system and position measuring method for use in an exposure apparatus discloses the following: providing an irradiation apparatus that irradiates the wafer with radiation to form the image on the wafer and providing a stage assembly; utilizing the exposure apparatus to form an image on the wafer (Fig. 4, col. 9, lines 33-60).

#### *Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-5, 9, and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Osanai et al. (6,285,444) in view of Nishi (4,897,553).

As for **claims 1 and 9**, Osanai in a positioning system discloses the following: a device table that retains the device; a stage mover assembly connected to the device table, the stage mover assembly moves the device table; a measurement system for monitoring the position of the device table, the measurement system including a first X mirror and a second X mirror (auxiliary mirror) that are secured to the device table (Fig. 1, Fig. 7; col. 7, lines 30-45; col. 11, lines 20-67; col. 12, lines 1-45).

Osanai is silent concerning fiducial marks. Nishi in an exposure apparatus discloses three fiducial marks on a stage for horizontal alignment (col. 3, lines 20-45; col. 4, lines 15-20). Therefore, it would be obvious to one skilled in the art at the time the invention was made to have a first, second, and third fiducial mark secured to the stage for an exposure apparatus in order to perform horizontal alignment.

As for **claim 2**, Osanai in view of Nishi discloses everything as above (see **claim 1**). In addition, Osanai discloses the measurement system includes a first X block that interacts with the first X mirror to monitor the position of the device table (Fig. 7, 33a-33c; col. 11, lines 40-45).

As for **claim 3**, Osanai in view of Nishi discloses everything as above (see **claim 2**). In addition, Osanai discloses the first x block interacts with the first x mirror to monitor the position of the stage when the table is in alignment position (Fig. 8, col. 11, lines 25-67; col. 12, lines 1-67; col. 13, lines 1-35).

As for **claims 4-5**, Osanai in view of Nishi discloses everything as above (see **claim 3**).

In addition, Osanai discloses the second X block interacts with the second X mirror to monitor the position of the stage when the table is in operational position (Fig. 7, **41**; Fig. 8, col. 11, lines 25-67; col. 12, lines 1-67; col. 13, lines 1-35).

As for **claim 13**, Osanai in view of Nishi discloses everything as above (see **claim 1**). In addition, Osanai discloses an exposure apparatus including the stage assembly of claim 1 (Fig. 8).

*Allowable Subject Matter*

8. **Claims 6-8 and 10-12** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to **claim 6**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a stage assembly a control system that utilizes the first fiducial mark and the second fiducial mark to determine the position of the first X mirror relative to the second X mirror, in combination with the rest of the limitations of **claims 6-8**.

As to **claim 10**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a stage assembly a control system that utilizes the first fiducial mark, the second fiducial mark, and the third fiducial mark to determine the position of the first X mirror relative to the second X mirror, in combination with the rest of the limitations of **claims 10-12**.

9. **Claims 16-23** are allowed.

As to **claim 16**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for determining the relative positions of a first X mirror and a second

mirror that are secured to a device table the step of determining the position of the first X mirror relative to the second X mirror using the first fiducial mark and the second fiducial mark, in combination with the rest of the limitations of **claims 16-23**.

10. **Claim 24** was objected to (see above) and claims **25-29** are objected to as being dependent upon an objected base claim, but would be allowable if **claim 24** is rewritten to overcome the objection above.

As to **claim 24**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method pertaining to a stage assembly that moves device the step of determining the position of the first X mirror relative to the second X mirror using the first fiducial mark and the second fiducial mark, in combination with the rest of the limitations of **claims 24-29**.

*Conclusion*

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent 6,285,457 to Ukaji

U.S. Patent 6,404,505 to Matsui

U.S. Patent 6,495,847 to Asano et al.

*Fax/Telephone Numbers*

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and

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- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

*Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (703) 308-7722*

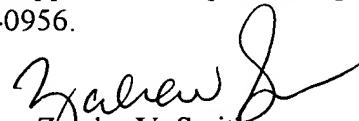
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (703) 305-4787.

The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

gs

March 22, 2003



Zandra V. Smith  
Primary Examiner  
Art Unit 2877